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| 10/722,672 | 11/28/2003 | John M. Popovich | 12,567 | .7742 |

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| ART UNIT | PAPER NUMBER |
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| 2822 | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/722,672 | POPOVICH, JOHN M. | |
| | Examiner | Art Unit | |
| | David E. Graybill | 2822 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *01 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-60* is/are pending in the application.

4a) Of the above claim(s) *57 and 58* is/are withdrawn from consideration.

5)☒ Claim(s) *35 and 56* is/are allowed.

6)☒ Claim(s) *1-34,36-55,59 and 60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 pages*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claims 57 and 58 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7-1-5.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features of claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters 111 and 112 have each been used to designate more than one part. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in

the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-26, 36-53, 59 and 60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is insufficient antecedent basis for the following language:

Claim 1, "the conductors that provide power for LED operation";

Claim 3, "the wires";

Claim 16, "the screen";

Claim 17, "the path of light from the LEDs";

Claim 21, "said lead or leads";

Claim 42, "said protective means."

Claims 3 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are those between the following:

Claim 3, the wires and the elements of claim 1;

Claim 42, said protective means and the elements of claim 1.

Claims 3, 16, 21, 25, 26 and 42-44 have not been rejected over the prior art because, in light of the 35 U.S.C. 112 rejections supra, there is a great deal of confusion and uncertainty as to the proper interpretation of the limitations of the claims; hence, it would not be proper to reject the claims on the basis of prior art. As stated in In re Steele, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), a rejection should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims. Also see In re Wilson, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970) (if no reasonably definite meaning can be ascribed to certain claim language, the claim is indefinite, not obvious). See also MPEP 2143.03 and 2173.06.

In the rejections infra, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 5, 7, 8, 11-14, 36, 41, 45, 46, 49, 52-55 and 59-60 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yokoyama (JP5134615).

In the English abstracts, translation and drawings, Yokoyama discloses the following:

The method of providing an LED array assembly, that includes: a) providing a grid of electrical conductors 11/12, b) providing light emitting diodes 6 and locating the diodes in association with the grid and in electrical communication with the conductors that provide power for LED operation, c) the grid operable to receive heat from the diodes during diode operation, and the grid inherently configured for passing coolant fluid for transfer of heat to the fluid; wherein the electrical conductors are provided in the form of insulated "pre-insulated" metal wires that act as electrical and thermal conductors and that also serve as structural load conductors, for arrays of such diodes; wherein the conductors are provided in the form of woven wires; wherein the array has at least one of the following characteristics: i) curvature ii) complex shape iii) compliant configuration iv) flexibility; wherein the grid inherently is provided as a dark (transmitting only a portion

of light) grid inherently to increase viewing contrast with LEDS during their operation; providing one of the following: i) a substrate 2 above which LEDS are placed ii) a superstrate associated with the array and LEDS to provide structural strength to the assembly; wherein the grid of electrical conductors is provided to include primary conductors 11 extending generally in one direction, and secondary conductors 12 extending generally in another direction, the LEDS being mounted on the primary conductors, and having terminals 7 extending to the secondary conductors for electrical association thereto; wherein the secondary conductors are configured to extend above and/or below the primary conductors; wherein the secondary conductors are provided to have one of the following: i) substantial spacing therebetween to pass coolant fluid through the grid, ii) lack of substantial spacing therebetween, to pass coolant fluid parallel to the grid, cross sections which are substantially less than the cross sections of primary conductors which support diodes, iv) junctions with diode wires; wherein certain of the conductors include multiple wire strands 11/12; wherein certain of said conductors that provide power for diode operation are configured as first, second and third pairs of wires inherently to transmit electrical energization to red, green and blue LED pixels, respectively; providing protective means 2 at one of the following: at the front of the grid; ii) at the rear of the grid;

iii) at both the front and rear of the grid; wherein the diodes inherently are removably supported by the grid; at least one of the following: i) diode emission control electronics provided within diode packages ii) diode emission control electronics 7/11/12 provided at or proximate an edge or edges of the grid; providing a conduit "pre-insulation" for extensions of the conductors, outside the grid; wherein the diodes are provided in the form of packages inherently having adjustable operative connection to the conductors characterized by one of the following: i) inherently rotatable adjustability about one axis (the vertical axis in the plan of the figures) ii) rotatable adjustability about two axes; wherein the diodes packages in the array are provided to have different positions (in the array) of inherently adjusted angularity; providing said light emitting diodes in a display array, inherently selectively energizing said diodes in the array to adjust the display, said passing of coolant fluid acting to cool the display array; inherently selectively adjusting the positioning of diodes in the display array.

The method of providing and LED assembly that includes: array a) providing a grid of electrical conductors, b) locating the diodes in association with the grid and in electrical communication with the conductors that providing light emitting diodes and provide power for LED operation, and providing LED structure "solder" allowing rotary adjustment of at least some

LEDS relative to conductors on which those LEDS are supported (e.g. via desoldering the LED structure); wherein said rotary adjustment is characterized by one of the following: i) rotation about an axis or axes defined by the LED or LEDS ii) rotation about a conductor axis or axes iii) rotation about both i) and ii) above.

To further clarify the disclosures of the grid inherently configured for passing coolant fluid for transfer of heat to the fluid, said passing of coolant fluid acting to cool the display array; the grid inherently is provided as a dark (transmitting only a portion of light) grid inherently to increase viewing contrast with LEDS during their operation; wires inherently to transmit electrical energization to red, green and blue LED pixels, respectively; the diodes inherently are removably supported by the grid; and packages inherently having adjustable operative connection to the conductors characterized by one of the following: i) inherently rotatable adjustability about one axis (the vertical axis in the plan of the figures), it is noted that the language, "for passing coolant fluid for transfer of heat to the fluid, said passing of coolant fluid acting to cool the display array," "to increase viewing contrast with LEDS during their operation," "to transmit electrical energization to red, green and blue LED pixels, respectively," "are removably supported by the grid," "adjustable operative connection," and, "rotatable

adjustability about one axis," is statements of intended use of the product made by the claimed process that do not appear to result in a manipulative difference between the product made by the claimed process and the product made by the process of Yokoyama. Further, because the product made by the process of Yokoyama appears to have the same structure as the product made by the claimed process, it appears to be inherently capable of being used for the intended uses, and the statements of intended use do not patentably distinguish the product made by the claimed process from the product made by the process of Yokoyama. The manner in which a product operates is not germane to the issue of patentability of the product; Ex parte Wikdahl 10 USPQ 2d 1546, 1548 (BPAI 1989); Ex parte McCullough 7 USPQ 2d 1889, 1891 (BPAI 1988); In re Finsterwalder 168 USPQ 530 (CCPA 1971); In re Casey 152 USPQ 235, 238 (CCPA 1967). Also, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim."; Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). And, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims."; In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963)). And, claims directed to product must be distinguished from the prior art in

terms of structure rather than function. In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does [or is intended to do]." Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

To further clarify the disclosure of inherently adjusted angularity, although Yokoyama does not appear to explicitly disclose the process limitation "adjusted," it is inherent in the process of Yokoyama that the diodes are adjusted because it is inherent that they are made correspondent or conformable with the rest of the assembly.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama as applied to claim 1, and further in combination with Maas (6402347).

Yokoyama does not appear to explicitly disclose effecting and/or guiding flow of coolant fluid through or along the array; providing a first sheet facing the diodes, to pass light emitted by the diodes; providing a

second sheet at an opposite side of the diodes, the first and second sheets forming an enclosure within which coolant fluid is flowable.

Nonetheless, at column 5, lines 9-62, Maas discloses effecting and/or guiding flow of coolant fluid "air" through or along the array; providing a first sheet (housing 21 wall having 28) facing the diodes 22/22', to pass light (at 28) emitted by the diodes; providing a second sheet (housing 21 wall opposite wall having 28) at an opposite side of the diodes, the first and second sheets forming an enclosure 21 within which coolant fluid is flowable. Moreover, it would have been obvious to combine this disclosure of Maas with the disclosure of Yokoyama because it would enable cooling of the diodes of Yokoyama.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama as applied to claim 1, and further in combination with Tanisawa (5478778).

Yokoyama does not appear to explicitly disclose providing balls or beads and seating the balls or beads on the conductors to act as spacers.

Still, at column 1, lines 11-47; and column 3, lines 1-67, Tanisawa discloses providing balls or beads 23 and seating the balls or beads on the conductors 22 inherently to act as spacers. Moreover, it would have been obvious to combine this disclosure of Tanisawa with the disclosure of

Yokoyama because it would enable precise alignment of the diodes Yokoyama.

Claims 9, 17-20, 22-24, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama as applied to claim 1, and further in combination with Yasukawa (6831305).

As cited, Yokoyama discloses wherein the diodes and array assembly define a display.

However, Yokoyama does not appear to explicitly disclose providing a first sheet facing the diodes, to pass light emitted by the diodes; providing a transparent panel extending in the path of light from the LEDS; wherein each diode is provided to include a light emitter or emitters, a transparent container having a window area, the emitter supported within the container, and a reflector within the container to reflect emitted light toward said window; providing an electrical lead or leads extending with helical configuration within the container to said emitter or emitters; wherein the lead or leads is or are formed to has or have a generally rectangular cross section, for stable support of the emitter or emitters; providing said lead or leads include wires associated with a red and/or green and/or blue emitter; wherein multiple of said diodes inherently have their container windows facing in the same or selected directions; providing a light reflecting mirror

or mirrors in association with a diode or diodes; wherein said mirror or mirrors is or are provided in the form of one or more of the following: a parabolic mirror dual mirrors within a package iii) a parabolic trough forming mirror or mirrors.

Nevertheless, at column 1, lines 54-56; column 3, lines 42-58; and column 4, line 60 to column 5, line 8, Yasukawa discloses providing a first sheet 43 facing the diodes, to pass light emitted by the diodes; providing a transparent panel 43 extending in the path of light from the LEDS; wherein each diode is provided to include a light emitter 1 or emitters, a transparent container 40 having a window 43 area, the emitter supported within the container, and a reflector 35 within the container to reflect emitted light toward said window; providing an electrical lead 33 or leads extending with configuration within the container to said emitter or emitters; wherein the lead or leads is or are formed to has or have a cross section, inherently for stable support of the emitter or emitters; providing said lead or leads include wires 15 inherently associated with a red and/or green and/or blue emitter; providing a light reflecting "mirror" or mirrors in association with a diode or diodes; wherein said mirror or mirrors is or are provided in the form of one or more of the following: i) a parabolic mirror ii) dual mirrors within a package iii) a parabolic trough forming mirror or mirrors. In addition, it

would have been obvious to combine this disclosure of Yasukawa with the disclosure of Yokoyama because it would facilitate provision of the light emitting device of Yokoyama, and having high reliability.

To further clarify, Yokoyama and Yasukawa disclose wherein said lead or leads include wires 15 inherently associated with a red and/or green and/or blue emitter because the definition of the term *associated* is: *to be brought together or into relationship in any of various intangible ways (as in memory or imagination)*, and such a mental process does not limit the scope of the claims.

In addition, the combination of Yokoyama and Yasukawa discloses that the multiple of said diodes inherently have their container windows facing in selected directions because it is inherent that the multiple of said diodes inherently have their container windows facing in directions chosen from a number of possible directions.

Also, Yokoyama and Yasukawa do not appear to explicitly disclose helical configuration or a generally rectangular cross section.

Notwithstanding, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose these particular dimensions because applicant has not disclosed that, in view of the applied

prior art, the dimensions are for any purpose, produce any result, or are otherwise unexpected or critical, and it appears prima facie that the process would possess utility using another dimension. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Claims 17-34 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Yasukawa (6831305).

As cited, Yasukawa discloses the method of providing a light emitting diode device, that includes providing an electrically energizable light emitter, or emitters; providing a transparent container having a window; iii) supporting the emitter or emitters within the container; and providing a reflector structure within the container to reflect emitted light toward said window; providing an electrical lead or leads extending with configuration within the container to said emitter or emitters; wherein the lead or leads is or are provided to has or have a cross section, and to support the emitter or

emitters; providing a metallic base carrying the container, and through which said lead or leads extend; wherein said reflector structure is provided to include spaced reflecting walls, and a curved reflector supported between said walls; providing said lead or leads to include wires inherently associated with a red and/or green and/or blue emitter; providing multiple of said devices "numbers of group III nitride compound semiconductor light-emitting elements" inherently having their windows facing in a display direction or directions; providing display structure "exclusive design substrate" supporting said diode devices in a multiple diode display configuration.

To further clarify, Yokoyama and Yasukawa disclose wherein said lead or leads include wires 15 inherently associated with a red and/or green and/or blue emitter because the definition of the term *associated* is: *to be brought together or into relationship in any of various intangible ways (as in memory or imagination)*, and such a mental process does not limit the scope of the claims.

Although Yasukawa does not appear to explicitly disclose helical configuration or a generally rectangular cross section, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to

choose these particular dimensions because applicant has not disclosed that, in view of the applied prior art, the dimensions are for any purpose, produce any result, or are otherwise unexpected or critical, and it appears prima facie that the process would possess utility using another dimension. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Claims 35 and 56 are allowed.

Claims 37-40, 50, 51 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions similar to the instant invention.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions similar to the instant invention.

**For information on the status of this application applicant should check PAIR:** Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Alternatively, applicant may contact the File Information Unit at (703) 308-2733. Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.**

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.
The fax phone number for group 2800 is (571) 273-8300.

David E. Graybill
Primary Examiner
Art Unit 2822

D.G.
9-Sep-05